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The brown-headed cowbird (BHCO) is an obligate brood parasite known to parasitize over 200 different avian species. This species lays its eggs in the nest of a host, allowing the foster parents to incubate and brood the cowbird fledglings. The cowbirds have a distinct advantage over many of their host species. The incubation period for BHCOs is generally about 2 fewer days than that of the host. This advantage allows the BHCO to hatch and mature more rapidly and eventually out compete host species' nestlings of smaller stature. Larger host species [e.g., red-winged blackbirds (*Agelaius phoeniceus*)] are capable of simultaneously raising both their own young and the young cowbirds. However, of hundreds of southwestern willow flycatcher nests monitored from 1988 through 1996, only two have fledged both cowbirds and flycatchers. Female BHCO are capable of laying dozens of eggs each breeding season because they conserve energy by allowing host species to raise their young.

The proposed study would provide valuable information on the distribution and daily migration patterns of brown-headed cowbirds within the Rio Grande Basin. Determining the daily migration patterns and distances traveled between breeding and feeding sites is essential when considering the impacts of cattle grazing on neotropical species, specifically the endangered southwestern willow flycatcher, and in developing a defensible grazing management plan for all riparian areas in the southwest. The need for these data has been exemplified by the recent filing of lawsuits against Reclamation, USFWS, and the Bureau of Land Management regarding current grazing practices and their effect on the continued existence of the southwestern willow flycatcher. Data gathered through this research effort will benefit Reclamation's UC and LC Regional Offices and all associated Area Offices when addressing cowbird/grazing issues.

The objectives of this study were to determine the distribution, abundance, and daily/seasonal movements of BHCOs within the Middle Rio Grande Basin of central New Mexico. The information gathered through this effort is intended to provide resource managers with quantified data on which sound management decisions regarding grazing and cowbird trapping efforts could be based. The study is designed to determine: (1) the degree of BHCO association with livestock; (2) whether livestock removal from Reclamation lands would effectively reduce the potential for brood parasitism; and (3) if livestock are removed, what would be a sufficient distance from nesting southwestern willow flycatchers, and other sensitive hosts. The data are collected through the use of radio telemetry for determining BHCO movements, and standardized point counts for determining the distribution and relative density of BHCOs within three treatment areas: (1) year-around livestock grazing; (2) no livestock grazing; and (3) seasonal livestock grazing with cowbird trapping and removal.

Currently, the point count and telemetry data suggest that, although there is an affinity for BHCOs to associate with grazing livestock, the requirements of food and hosts are of greater significance when estimating BHCO abundance. This is based on the abundance of BHCOs within an ungrazed reach of the Rio Grande being equal to or greater than either the seasonally grazed or year-around grazed reaches.

The telemetry data indicate that BHCOs within the Middle Rio Grande are able to meet all their daily requirements without commuting large distances, contrary to previous assumptions. BHCOs within the study area traveled less than 2 km on a daily basis, and generally less than 5 km on a seasonal basis. Other studies

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have reported daily commutes as great as 19 km. These data indicate that livestock removal for distances up to 10 km (as proposed) would be excessive within the study area.

Participation in this study continues to improve due to the numerous resource issues surrounding livestock grazing on public lands and the potential direct and indirect impacts to the southwestern willow flycatcher. The following partners are those that have significantly contributed both time and financial resources to this study:

Albuquerque Area Office (Reclamation)
U.S. Forest Service Research Center
Upper Colorado Regional Office (Reclamation)
Lower Colorado Regional Office (Reclamation)
New Mexico Natural Heritage Program
U.S. Fish and Wildlife Service
Bureau of Land Management, Socorro, New Mexico
USGS Biological Resources Division
New Mexico Game and Fish
Colorado State University, Department of Natural Resources

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